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*Connecticut
Agricultural
Experiment
Station,
New Haven*

Analysis of
Agricultural Feeds
and Pet Foods
Sold in Connecticut
2000

BY MARY JANE INCORVIA MATTINA

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From January 1, 2000 through December 31, 2000 the Department of Analytical Chemistry at The Connecticut Agricultural Experiment Station analyzed 115 animal feed products sold in Connecticut. The samples represented both products for domestic animals and for commercial agricultural operations. Nineteen manufacturers were represented. The products were collected by Alton van Dyke and John Schneider of the Connecticut Department of Agriculture and were analyzed by Craig Musante and Mamie Pyles under the supervision of Dr. David Stilwell.

Of the total number of samples, 25 (21.7%) were found to be unsatisfactory in one or more macronutrients and/or micronutrients. A sample is reported to be unsatisfactory if the found value of a parameter differs from the label guarantee using the percent analytical variation guidelines recommended by the Association of American Feed Control Officials. In the accompanying tables are shown the results of analyses. All values are in percent unless otherwise indicated. For the macronutrients a deficiency in a guaranteed value (G) is indicated by a minus (-) sign next to the found parameter (F) value and an excess of a substance by a plus (+) sign; the same convention applies to the micronutrients. Specifically, three samples were deficient in protein; four were deficient in fat; and nineteen contained unacceptable levels of micronutrients.

Table 1. Results of analysis of animal feed products for protein, fat, fiber, and moisture, showing percent guaranteed and percent found. + means excess, - means deficiency.

Sample description	Protein		Fat		Fiber		Moisture	
	%G	%F	%G	%F	%G	%F	%G	%F
A. SMYTHE TRADING CORP.								
Kaytee Bay-Mor Pigeon Feed NC/15	15	16.1	2	2.2	5	5.2	12	9.9
AGWAY, INC.								
Agway Sheep & Goat Feed, Breeder	16	16	3	3.9	9.6	8		
Agway Sheep & Goat Feed for Growing, Breeding & Lactating	16	15.9	3	4.1	8	7		
Agway Game Bird & Turkey Grower Feed	21	21.2	3	3.2	4.5	2.5		
Agway Game Bird & Turkey Finisher & Maint.	16	16.2	2.5	3.5	4	2.6		
Agway Chick Grower Feed	14.5	14.8	3.5	3.6	4	3		
Agway Chick Starter	18	19.6	3	3.4	4	2.4		
Agway Egg Layer	16	17.2	3	3.3	4	2.1		
Agway Hog Feed	14	14.6	3.5	3.3	5	2.4		
Agway Dairy K Pellets	16	15.7	2.5	3.6	12.8	9.2		
Agway Legends 12p Pelleted Horse Feed	12	13.4	4.5	4.4	8	6.6		
Agway Bonanza 12 Complete Horse Feed	12.5	15.8	3.5	4	24	15.6		
Agway Legends 14P Horse Feed	14	15.9	4.5	4.5	8	5.4		
Agway Sow & Pig T-40	16	15.6	3	3.2	5.5	2.5		
Agway Pig Starter Plus, Medicated Feed	18	17.9	3.5	5	4.5	2.5		
Agway Hi-Energy Lamb Medicated Feed	16	16.7	3.5	3.3	9	6.1		
BLUE SEAL FEEDS, INC								
Blue Seal Practical Pet 21 Dog Food	21	24.2	7.5	9.8	6	5.1	12	7.1
Blue Seal Concerto Wild Bird Food	14	15.6	20	24.5	20	11.6		
Blue Seal Caged Bird Diet, Parrot	13	13.6	11	16	14	11.6		9.2
Blue Seal Milk Maker 20	20	21.1	2	4	11	5.7		
Blue Seal Nature's Choice Wild Bird Feed	14	15	19	19.5	18	8.5		
Blue Seal Breeder Pellets	17	17.6	2.5	3.2	4.5	2.3		
Blue Seal Guinea Pig Pellets	20	20.2	4	4.1	16	9.7		
Blue Seal Pigeon Feed	13	14.7	2	2.1	4	2.9	13	11.4
Blue Seal Contender Horse Feed	16	16.8	3	4.7	7.5	4.7		
Blue Seal Deer Pellets	16	17.8	2.5	3.6	12.5	8.3		
Blue Seal Milk-Maker 16	16	17.3	2	4.1	11	5.6		

Table 1. Results of analysis of animal feed products for protein, fat, fiber, and moisture, showing percent guaranteed and percent found. + means excess, - means deficiency (continued).

Sample description	Protein		Fat		Fiber		Moisture	
	%G	%F	%G	%F	%G	%F	%G	%F
CARGILL, ANIMAL NUTRITION DIV.								
K&L 300001-B Peaking #17	20.07	19.7	7.4	8.1	2.5	2.8		
K&L 102705-BW Focus Heifer	30.0	29.8	4.5	5.4	7.2	7.5		
K&L 102702-HC Calf 109GT	18.5	19.6	4.4	5	7	5.6		
K&L 10070-G-BP Focus	21.8	21.7	5.2	5.4	3.2	2.9		
K&L 300001-F1-EB A-20#	17.7	18	5.1	5.1	2.5	1.9		
K&L 100705-S Focus	26.34	27.5	5.8	6.3	4.6	4.2		
K&L Dairy 16	16	18.9	3	4.2	8.75	8.6		
K&L 100706-DB	31.4	32.2	7.4	7.5	2.5	2.4		
K&L 100705-CP Focus	24.46	24.5	4.9	5.2	7.83	6.6		
K&L 102705-CC Calf	18.06	18.5	4	4.6	8	5.9		
K&L 300001-B2 Chick Starter	20.3	20	4.5	5.1	3.5	3.4		
CARGILL, NUTRENA DIV.								
Nutrena Horse Quik Ration with Roughage (ABF)	14	15.4	2	3.9	20	14.3		
Nutrena Triumph 12 Horse Pellets (ABF)	12	13.8	2.5	3.9	10	10.3		
Nutrena Life Design Complete (ABF)	14	16.1	7	6.8	8	6.2		
Nutrena Horse Kwik 12.5% Ration (ABF)	12.5	16.2	2	3.3	20	14.2		
Nutrena Egg Producer Pellets (ABF)	16	16.9	3	3.9	4.5	4.1		
Nutrena Turkey/Game Bird Grower Pellets (ABF)	22	23	3	4.9	6	5.6		
River Run Pro Maintenance Dog Food	22	24.7	12	14.3	4.5	4.4	12	5.2
River Run Puppy Food	28	29.3	12	11.1	3	2.4	10	5.1
Nutrena Life Design Prime 12 (ABF)	12	15.1	3	3.5	15	13.1		
Nutrena Pig & Hog Feed (ABF)	15	15.6	2.5	4.1	7	4.9		
Nutrena Rabbit Pellets	16	18	2.5	3.2	16	15.3		
Nutrena Top Lamb 16 Feed (ABF) (No Added Copper)	16	16	2	3.2	11	10.2		
Nutrena Vitality Gold 14 Horse Feed (GF)	14	15.5	9	8.8	8	4.7		
Nutrena Farr Legacy (PO)	12.5	13.7	9	5.7-	10	9.1		
Nutrena Excel 16 Dairy Feed (ABF)	16	16.3	2.5	3.5	10	8.7		
Nutrena Life Design Youth (ABF)	16	18.6	4	4.4	7	6.5		
Nutrena Chick Starter (ABF) Medicated	20	21.4	3	2.9	4	2.9		

Table 1. Results of analysis of animal feed products for protein, fat, fiber, and moisture, showing percent guaranteed and percent found. + means excess, - means deficiency (continued).

Sample description	Protein		Fat		Fiber		Moisture	
	%G	%F	%G	%F	%G	%F	%G	%F
CENTRAL CONNECTICUT COOP								
Central 18%	18	19.2	3	4.8	8.5	5		
Central 18% Calf Pellets	18	19.9	3.5	3.8	16	11.5		
Central 16% Treated Pellets	16	17.3	3	3.7	8.5	7.8		
Central 22% Ruminator	22	22.7	3	4.3	8.5	4.3		
Central 28% Hi Soluble Dairy Pellets	28	26.5-	4	4.2	8.5	5.9		
Central Hog Pellets	16	15.5	3.5	4.4	3.5	2.5		
Central 22% Hi Soluble Pellets	22	22	3	4.2	8.5	4.9		
Central Turkey Development Pellets	15	15.6	3.5	4.6	4	3.2		
Central Beef Pellets	12	16.25	2.5	3.4	12	8.5		
Central 26% Ruminator Pellets 0	26	21-	3	6.3	8.5	4.3		
IAMS CO.								
Iams Adult Mini Chunks Dog Food	26	26.6	15	16.1	4	2.7	10	5.2
K.M. BROWN'S SONS, INC.								
Brown's Guinea Pig Food	15	16.7	3	3.6	14	10.7	15	6.9
L&M ANIMAL FARMS								
Vita-Vittles Golden Hamster	13	13.6	4	6.2	6	4.4		9.1
LEBANON SEABOARD CORP								
Lyric Quack 'n Snack	14	14	12	14.3	12	7.3	12	7.1
MANNA PRO CORPORATION								
Calf Manna Concentrated Ration	25	26.1	3	2.7	6	3.7		
NEW ENGLAND FEEDS/ WILD BIRD FOOD CO.								
New England Feeds 23% Grist	23	16.8-	5	4.4-	4	3.3		
OHIO BLENDERS, INC.								
Alfa-Bits	17	18.7	1.5	2	27	23.5		

Table 1. Results of analysis of animal feed products for protein, fat, fiber, and moisture, showing percent guaranteed and percent found. + means excess, - means deficiency (continued).

Sample description	Protein		Fat		Fiber		Moisture	
	%G	%F	%G	%F	%G	%F	%G	%F
PMI FEEDS, INC.								
Aquamax Grower 600	41	40.7	12	13.4	4	2.9		
Mazuri Guinea Pig Diet #5664	18	19.9	4	4.3	16	13.4		
PRO-PET, LLC/OHIO								
Muenster Perfect Balance Emu Grower	18	21.3	5	6.9	7	3.6		
Pardner Dog Food	21	24.5	7	8.8	5.5	4.1	10	8.7
Big Red Rabbit's Choice Rabbit Food	15	15.7	2	2.7	18	15.8		
Big Red Guinea Pig Food	18	20	4	4.5	15	13.1	11	8.1
Pro-Pet Lamb Meal & Rice Formula Dog Food	23	26.3	14	13.8	3.5	2.5	10	7.1
Li'l Red Original Flavor Cat Dinner	31	33.7	10	11.4	3	1.6	11	8.9
PURINA MILLS, INC.								
Purina Layena	16	16.7	2.5	4.1	7	5.6		
Purina Start & Grow Medicated MP 0.0125%	17	18.9	3	5.6	5	3.9		
Purina Meat Builder	20	20.2	3	5.6	5	3.5		
Purina Duck Grower W/O	16	16.4	3	4	5	3.3		
Purina Milk Chow Special 16% Coarse	16	15.7	2	3.9	9	4.2		
Purina Goat Chow	16	17.8	2	4.3	9	4.7		
Purina Turkey Grower NT 0.01875%	20	19.5	3	5.1	5.5	3.5		
Purina Rabbit Chow Complete Blend	16	16.6	1	3.2	20	18.3		
Purina Animax	28	27.5	3	4.6	6	2.8		
Purina Turkey Finisher W/O	16	16.5	3.5	4	4.5	3.6		
Purina Lamb Developer W/O	12	14.6	1.5	3.4	18	14		
Purina Equine Adult Horse Feed	12	13.9	3	2.1-	25	23.9		
Purina Hog Grower Chow OTC 50	16	16.3	2.5	5	5	4.1		
Purina Pure-Pride #100	10	12.9	2.5	3	12	11		
Purina Turkey Starter MP 0.0125	26	27.9	3	5.1	5.5	4.7		
Purina Game Bird Maintenance Chow	12.5	13.4	2.5	3.4	10	6.1		
Purina Pork Finisher BMD 20	12	13.5	2.5	4.1	7	6.9		
Purina Pigeon Chow Checkers	15	15.6	2.5	3.8	5.5	3.4		
Purina OstriGro Grower	18	19.8	2	2.7	12	11.3		

Table 1. Results of analysis of animal feed products for protein, fat, fiber, and moisture, showing percent guaranteed and percent found. + means excess, - means deficiency (continued).

Sample description	Protein		Fat		Fiber		Moisture	
	%G	%F	%G	%F	%G	%F	%G	%F
SHAGBARK LUMBER & FARM SUPPLIES								
Seed mix; no variety listed	14	13.8	15.9	22.6	28.62	14.7		
SUNFLOWER, INC.								
Feathered Friend Bird Snack Wild Bird Food	11	12.7	6	8.7	10.5	7.7	12	6.6
WAUREGAN GRAIN CO.								
Wauregan Layer	15	15.4	3	1.9-	4	3.1		
Wauregan 16% Pork Maker Plus	16	18.1	3	3.7	4.5	5.1		
Wauregan Texturized 16%	16	17.8	3	3.5	8	7.9		
Wauregan Sheep & Goat	18	19.2	3	4.8	7	4.8		
Wauregan Turkey & Game Bird Grower	22	23.8	3.5	2.5-	4.5	3.2		
Wauregan Rabbit Pellets	20	21.3	2.5	2.6	18	12.7		
Wauregan Pace-Setter Performance Plus Horse	13	13.75	5	4-	11	9.11		
Wauregan Pace-Setter Horse Feed, Equine Compl.	14	15.4	3	3.2	16	15.9		
Wauregan Horse Oats	10	11.9	3	4.7	12	13		
Wauregan Heifer Grower Pellets, Medicated	16	15.6	3	4	8	6.2		
Wauregan Rabbit Pellets 16	16	17.8	3	2.9	18	17.2		
Wauregan Mustang 14% Horse Pellets	14	15	3	3.2	12	11.8		
Wauregan Pace-Setter Horse Feed Growth & Dev.	16	16.7	3	3.2	11.5	8.1		

Table 2. Results of analysis of animal feed products for micronutrients in parts per million. + means excess, - means deficiency.

Sample description	Micronutrients
AGWAY	
Agway Sheep & Goat Feed, Breeder	Calcium 1.2; Phosphorus 0.8; Selenium 0.7; Sodium 0.41
Agway Sheep & Goat Feed for Growing, Breeding & Lactating	Calcium 1.1; Phosphorus 0.8; Selenium 0.6;
Agway Game Bird & Turkey Grower Feed	Calcium 1.4; Phosphorus 1; Sodium 0.17;
Agway Game Bird & Turkey Finisher & Maint.	Calcium 0.9; Phosphorus 0.8; Sodium 0.16
Agway Chick Grower Feed	Calcium 1; Phosphorus 0.7; Sodium 0.14
Agway Chick Starter	Calcium 0.94; Phosphorus 0.8; Sodium 0.16
Agway Egg Layer	Calcium 3.65; Phosphorus 0.6; Sodium 0.2
Agway Hog Feed	Calcium 0.92+; Phosphorus 0.6; Zinc 80.6; Selenium 0.3; Sodium 0.21
Agway Dairy; K Pellets	Calcium 1.6; Phosphorus 0.9; Selenium 0.7
Agway Legends 12p Pelleted Horse Feed	Calcium 1.2; Phosphorus 0.8; Copper 50.3; Zinc 212; Selenium 1.1
Agway Bonanza 12 Complete Horse Feed	Calcium 1.4; Phosphorus 0.6; Copper 37.5; Zinc 152; Selenium 0.6
Agway Legends 14P Horse Feed	Calcium 1; Phosphorus 0.9; Copper 50.8; Zinc 220; Selenium 0.8
Agway Sow & Pig T-40	Calcium 1; Phosphorus 0.8; Zinc 95; Selenium 0.4; Sodium 0.18
Agway Pig Starter Plus, Medicated Feed	Calcium 1.12; Phosphorus 0.8; Zinc 65; Selenium 0.3; Sodium 0.17
Agway Hi-Energy Lamb Medicated Feed	Calcium 1.5; Phosphorus 0.8; Selenium 0.4; Sodium 0.21
BLUE SEAL FEEDS, INC	
Blue Seal Milk Maker 20	Calcium 1.3; Phosphorus 1; Selenium 0.5
Blue Seal Breeder Pellets	Calcium 3.1; Phosphorus 0.5;
Blue Seal Guinea Pig Pellets	Calcium 1.13; Phosphorus 0.8
Blue Seal Contender Horse Feed	Calcium 1.04; Phosphorus 0.9; Copper 32.5; Zinc 172; Selenium 0.5
Blue Seal Milk-Maker 16	Calcium 1.3; Phosphorus 0.9; Selenium 0.7
CARGILL, ANIMAL NUTRITION DIV.	
K&L 300001-B Peaking #17	Calcium 3.9; Phosphorus 0.7
K&L 102705-BW Focus Heifer	Calcium 0.8; Phosphorus 1.1; Sodium 0.07-
K&L 102702-HC Calf 109GT	Calcium 1.1; Phosphorus 0.9; Potassium; 1
K&L 10070-G-BP Focus	Calcium 1.6; Phosphorus 0.7; Selenium 1.2; Sodium 1.1
K&L 300001-F1-EB A-20#	Calcium 4.5; Phosphorus 0.7; Sodium 0.17
K&L 100705-S Focus	Calcium 1.9; Phosphorus 0.6; Sodium 1.3
K&L Dairy 16	Calcium 1.7; Phosphorus 0.9; Selenium 0.5; Sodium 0.7

Table 2. Results of analysis of animal feed products for micronutrients in parts per million. + means excess, - means deficiency (continued).

Sample description	Micronutrients
K&L 100706-DB	Calcium 4.5+; Phosphorus 0.6; Selenium 0.5-; Sodium 3.8
K&L 100705-CP Focus	Calcium 1.4; Phosphorus 0.8; Selenium 0.7; Sodium 1
K&L 102705-CC Calf	Calcium 1.1; Phosphorus 0.9; Potassium; 1
K&L 300001-B2 Chick Starter	Calcium 0.74; Phosphorus 0.7; Sodium 0.3+
CARGILL, NUTRENA DIV.	
Nutrena Horse Quik Ration with Roughage (ABF)	Calcium 1.3; Phosphorus 0.8; Copper 23-; Zinc 107-; Selenium 0.4
Nutrena Triumph 12 Horse Pellets (ABF)	Calcium 1; Phosphorus 0.9; Copper 23-; Zinc 143; Selenium 0.7
Nutrena Life Design Complete (ABF)	Calcium 1.1; Phosphorus 0.9; Copper 35; Zinc 190; Selenium 0.5
Nutrena Horse Kwik 12.5% Ration (ABF)	Calcium 1.14; Phosphorus 0.8; Copper 25-; Zinc 135; Selenium 0.5
Nutrena Egg Producer Pellets (ABF)	Calcium 3.9; Phosphorus 0.9; Sodium 0.14
Nutrena Turkey/Game Bird Grower Pellets (ABF)	Calcium 0.8; Phosphorus 1.3; Sodium 0.2
River Run Puppy Food	Calcium 2.3; Phosphorus 1.5
Nutrena Life Design Prime 12 (ABF)	Calcium 1.4+; Phosphorus 0.9; Copper 33; Selenium 0.8
Nutrena Pig & Hog Feed (ABF)	Calcium 1.2; Phosphorus 0.9; Zinc 150; Selenium 0.4; Sodium 0.2
Nutrena Rabbit Pellets	Calcium 1.2; Phosphorus 0.8; Sodium 0.17
Nutrena Top Lamb 16 Feed (ABF) (No Added Copper)	Calcium 1; Phosphorus 0.6; Sodium 1.2+
Nutrena Vitality Gold 14 Horse Feed (GF)	Calcium 1.3; Phosphorus 1.2; Copper 69; Zinc 204; Selenium 0.3
Nutrena Farr Legacy (PO)	Calcium 1; Phosphorus 0.6; Copper 16-; Zinc 112; Selenium 0.3
Nutrena Excel 16 Dairy Feed (ABF)	Calcium 1.2; Phosphorus 1; Potassium; 1; Selenium 0.5; Sodium 0.4
Nutrena Life Design Youth (ABF)	Calcium 1.2; Phosphorus 1; Copper 25-; Zinc 114-; Selenium 0.7
Nutrena Chick Starter (ABF) Medicated	Calcium 1.4+; Phosphorus 0.9; Sodium 0.16
MANNA PRO CORPORATION	
Calf Manna Concentrated Ration	Calcium 1.1; Phosphorus 0.8; Copper 23.2; Zinc 141; Selenium 0.15
NEW ENGLAND FEEDS/ WILD BIRD FOOD CO.	
New England Feeds 23% Grist	Calcium 1.1; Phosphorus 0.9; Potassium; 1; Selenium 0.9 -

Table 2. Results of analysis of animal feed products for micronutrients in parts per million. + means excess, - means deficiency (continued).

Sample description	Micronutrients
PMI FEEDS, INC.	
Aquamax Grower 600	Calcium 2.6+; Phosphorus 1.7; Sodium 0.26-
PRO-PET, LLC/OHIO	
Muenster Perfect Balance Emu Grower	Calcium 2.8+; Phosphorus 1.5; Sodium 0.21-
Big Red Rabbit's Choice Rabbit Food	Calcium 0.9; Phosphorus 0.7;
PURINA MILLS, INC.	
Purina Layena	Calcium 4.1, Phosphorus 0.7
Purina Start & Grow Medicated MP 0.0125%	Calcium 0.9; Phosphorus 0.8
Purina Meat Builder	Calcium 1.0; Phosphorus 0.8
Purina Duck Grower W/O	Calcium 0.6; Phosphorus 0.7
Purina Milk Chow Special 16% Coarse	Calcium 0.7; Phosphorus 0.7; Selenium 0.6
Purina Goat Chow	Calcium 1.2; Phosphorus 0.8; Copper 41+; Selenium 0.7
Purina Turkey Grower NT 0.01875%	Calcium 1.1; Phosphorus 0.8
Purina Rabbit Chow Complete Blend	Calcium 1.1; Phosphorus 0.6
Purina Animax	Calcium 1.7; Phosphorus 1; Potassium; 1.4; Copper 41; Zinc 207; Selenium 0.4
Purina Turkey Finisher W/O	Calcium 0.8; Phosphorus 0.7
Purina Lamb Developer W/O	Calcium 0.7; Phosphorus 0.5; Selenium 0.4
Purina Equine Adult Horse Feed	Calcium 0.96; Phosphorus 0.6; Copper 27; Zinc 136; Selenium 0.5
Purina Hog Grower Chow OTC 50	Calcium 0.7; Phosphorus 0.7; Zinc 96; Selenium 0.3
Purina Pure-Pride #100	Calcium 0.9; Phosphorus 0.7; Copper 34; Zinc 175; Selenium 0.6
Purina Turkey Starter MP 0.0125	Calcium 1.5; Phosphorus 1.2
Purina Game Bird Maintenance Chow	Calcium 0.8; Phosphorus 0.7
Purina Pork Finisher BMD 20	Calcium 0.8; Phosphorus 0.8, Zinc 120; Selenium 0.4
WAUREGAN GRAIN CO.	
Wauregan Layer	Calcium 4.4; Phosphorus 0.45
Wauregan Texturized 16%	Calcium 1.2; Phosphorus 0.8; Magnesium, 0.35; Potassium; 1.2; Sulfur; 0.3
Wauregan Pace-Setter Performance Plus Horse	Calcium 1.5+; Phosphorus 1; Copper 59; Zinc 240; Selenium 0.8
Wauregan Pace-Setter Horse Feed, Equine Compl.	Calcium 1.4+; Phosphorus 0.8; Copper 16.2-; Zinc 85-; Selenium 0.4
Wauregan Mustang 14% Horse Pellets	Calcium 1.5+; Phosphorus 0.9; Copper 26-; Zinc 145; Selenium 0.5
Wauregan Pace-Setter Horse Feed Growth & Dev.	Calcium 1.4+; Phosphorus 0.8; Copper 14.8-; Zinc 83.8-; Selenium 0.5



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